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The Sawfly Tribe Lycaotini in South America

(Hymenoptera: Tenthredinidae)

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The tribe Lycaotini is represented by two genera in South America and is found in Ecuador, Bolivia, southern Brazil, and Chile. These genera are related to, but distinct from, *Lycaota* Konow and *Blennogeneris* MacGillivray, the two lycaotine genera found in western North America. This distribution represents another example of the occurrence of closely related forms in North and South America. Other bipolar taxa of the Tenthredinidae are *Pristiphora* Latreille in North America and southern Brazil, *Periclista* Konow in North America and Chile and southern Argentina, and the Fenusini with the genera *Profenusa* MacGillivray and *Bidigitus* Smith in North America closely related to *Notofenusa* Benson and *Brasinusa* Malaise in Chile, Argentina, and southern Brazil. The northernmost species of Lycaotini in South America is *Synaptoneura vopida* n. sp. in Ecuador. No other representatives of the tribe are found to the north until *Lycaota bouquetensis* Smith is encountered in southern California.

Benson (1966) gave a key to eight world genera of Lycaotini. He included only the genus *Trichotaxonus* Rohwer (= *Kuschelia* Malaise) from South America, neglecting to mention *Synaptoneura* Konow. Smith (1969) defined the tribe and treated the Nearctic species. This tribe is in the subfamily Blennocampinae and is distinguished by the venation of the forewing as follows: Veins M and Rs + M meet Sc + R at the same point; veins M and 1m-cu parallel; and vein 2A and 3A complete, fused to 1A for short distance at center or slightly separated from 1A but connected to 1A by a very short crossvein. Vein 2A and 3A is sometimes separated from 1A in the species *Trichotaxonus coquimbensis* (Spinola) but this is a variable character and this vein is usually fused to 1A. Specimens which have vein 2A and 3A separated may be confused with the Allantinae, but the Allantinae have a long, oblique anal crossvein and vein 2A and 3A is widely separated from 1A.

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Another genus of Blennocampinae, *Metaneura* Malaise, has a small basal anal cell in the forewing formed by the basal stub of vein 2A and 3A curving up and meeting 1A. This genus, however, is more closely related to other genera of Blennocampinae in which the basal stub of 2A and 3A is curved up but not meeting 1A; therefore, it is not included in the Lycaotini.

The kind cooperation of the following has made this review of South American Lycaotini possible: Dr. J. Oehlke, Institut fur Pflanzenschutzforschung, Eberswalde, Germany; Dr. Per Inge Persson, Naturhistoriska Riksmuseum, Stockholm, Sweden; Dr. B. Pisarski, Polska Akademia Nauk, Instytut Zoologiczny, Warsaw, Poland; Dr. M. Zunino, Museo ed Istituto di Zoologia Sistematica, Universita di Torino, Torino, Italy; and Dr. Paul H. Arnaud, Jr., Department of Entomology, California Academy of Sciences, San Francisco.

KEY TO THE GENERA OF LYCAOTINI

Tarsal claws bifid, with basal lobe; malar space distinct .... *Synaptoneura* Konow
Tarsal claws trifid, without basal lobe; malar space linear .... *Trichotaxonus* Rohwer

SYNAPTONEURA KONOW

Synaptoneura Konow, 1908, p. 160. Type-species: *Synaptoneura boliviensis* Konow. Monotypic.

DESCRIPTION.—Antenna long, slender, first and second segments each longer than broad, third segment slightly longer than fourth segment, segments beyond third gradually decreasing in length (Fig. 7). Clypeus with shallow central emargination; malar space distinct, nearly as wide as diameter of front ocellus; no genal carina; eyes small, converging below but farther apart below than length of an eye; postocellar area broader than long. No prepectus; distance between cenchri equal to breadth of a cenchrus. Tarsal claw bifid, inner tooth slightly shorter than outer tooth and teeth closely appressed; basal lobe distinct, acute (Fig. 5); hindbasitarsus shorter than following segments combined. Forewing with vein 2A and 3A complete, fused with 1A at center. Hindwing with cell M present; anal cell sessile; apex of radial cell close to margin of wing, with short spurious vein. Male of *S. vopida* with peripheral vein in hindwing. Wings as in Fig. 1.

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FIG. 1, forewing and hindwing of *Trichotaxonus coquimbensis*, ♀. FIG. 2, anal cell of forewing of *T. coquimbensis*, ♀, variation. FIG. 3, hindwing of *T. coquimbensis*, ♂. FIG. 4, tarsal claw of *T. coquimbensis*. FIG. 5, tarsal claw of *Synaptoneura vopida*. FIG. 6, antenna of *T. coquimbensis*. FIG. 7, antenna of *S. vopida*.

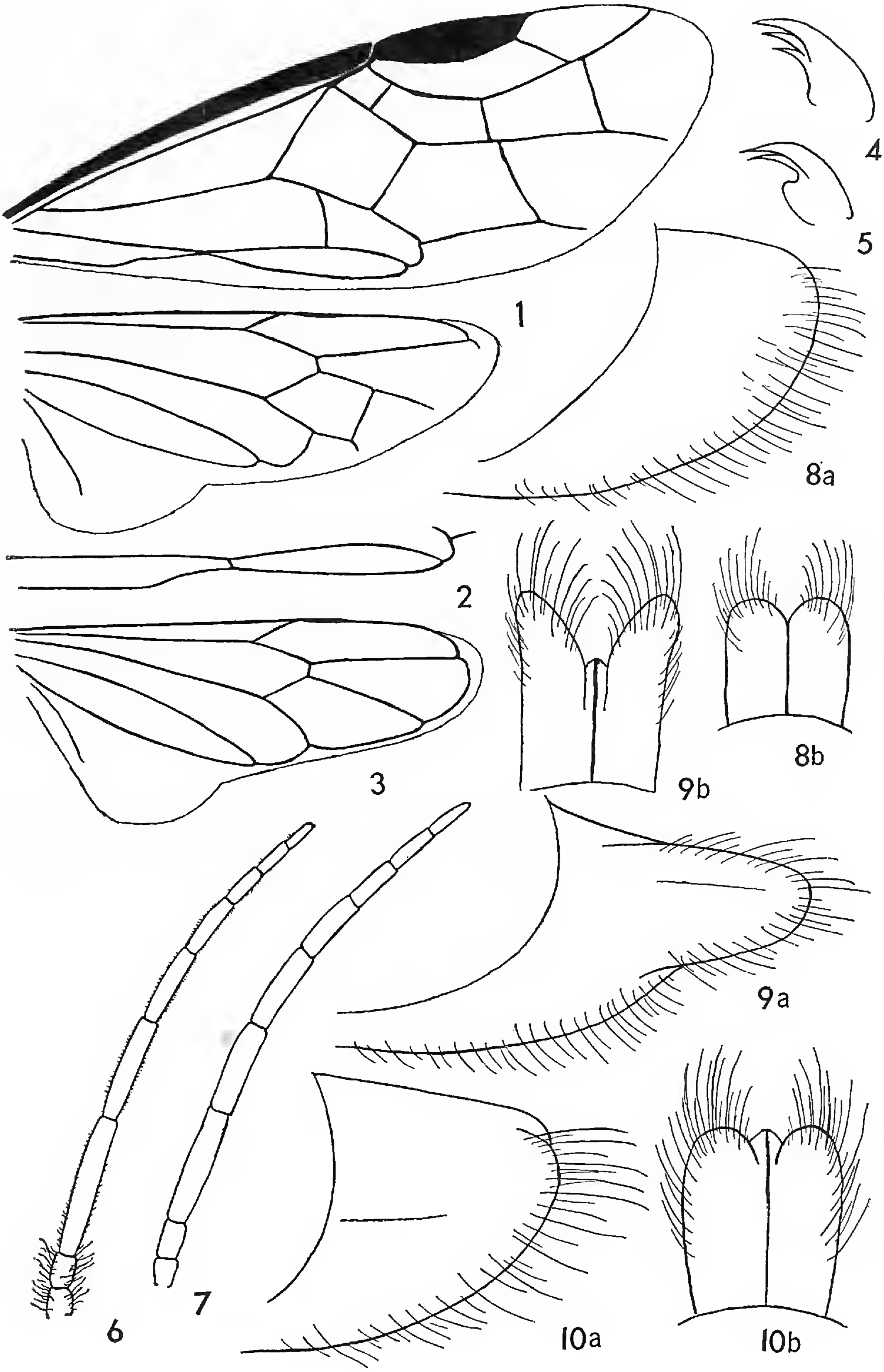

FIG. 8, female sheath of *T. coquimbensis*, a. lateral and b. dorsal. FIG. 9, female sheath of *S. boliviensis*, a. lateral and b. dorsal. FIG. 10, female sheath of *S. vopida*, a. lateral and b. dorsal.

DISCUSSION.—In the only known specimen of *S. boliviensis*, a female, the antennae are missing; therefore, the above characters given for the antenna as well as for the male are based on *S. vopida.*

This genus is distinguished by the broad malar space and the bifid tarsal claws with a basal lobe.

KEY TO SPECIES OF SYNAPTONEURA

Abdomen black; hindfemur and hindtibia orange; female sheath with slender, protruding scopa (Fig. 9a, 9b) .... *boliviensis* Konow

Abdomen, except for apical two or three segments, orange; hindlegs black; female sheath with short, blunt scopa (Fig. 10a, 10b) .... *vopida* Smith, n. sp.

SYNAPTONEURA BOLIVIENSIS Konow

Synaptoneura boliviensis Konow, 1908, p. 160. ♀.

FEMALE.—Length, 7.2 mm. Antenna and head black (flagellum missing). Thorax black. Legs black with each femur except for extreme base, outer surface of foretibia, and hindtibia except for extreme apex, orange. Abdomen black with very narrow white band on posterior margin of each segment. Wings uniformly lightly infuscated; veins and stigma black. Sheath with slender protruding scopa at apex, from above widened toward apex, in lateral view long, straight above and rounded below (Fig. 9a, 9b). Serrulae of lancet far apart, rounded, those near center symmetrical, those at apex asymmetrical.

MALE.—Unknown.

TYPE.—Female, at the Institut fur Pflanzenschutzforschung, Eberswalde, Germany, labeled "Mapiri, Bolivia," "Coll. Konow," "typus" [red label], and the handwritten name label "Synaptoneura boliviensis Knw., Bolivia."

DISTRIBUTION.—Known only from the type locality.

DISCUSSION.—This species is distinguished from *S. vopida* by the black abdomen, partly orange legs, and the structure of the female sheath, as illustrated.

Synaptoneura vopida Smith, new species

FEMALE.—Average length, 7.0 mm. Antenna and head black. Thorax black, only upper portion of metapleuron with orange spot. Legs black, apical half of forefemur, extreme base of foretibia, and apex of midfemur orange. Abdomen orange with basal plates, apical two or three segments, and mesal stripe on venter black; sternites except for apical two or three segments sometimes all orange. Wings uniformly, lightly infuscated; veins and stigma black. Antenna long, slender, about two and one-half times width of head. Sheath with short, blunt scopa, from above broad and slightly widened toward apex, in lateral view, straight above and rounded below (Fig. 10a, 10b). Lancet with serrulae shallow, rounded and far apart (Fig. 12).

MALE.—Average length, 6.5 mm. Color and structure similar to that of female. Hindwing with peripheral vein. Harpe and parapenis as in Fig. 15; penis valve rectangular, with lateral spine (Fig. 16).

Holotype female, LAGO ZURUCUCHU, 11 MI. W. OF CUENCA, ECUADOR, 16 February 1965, E. I. Schlinger and E. S. Ross. At the California Academy of Sciences, San Francisco.

PARATYPES.—Same data as for holotype (5♀, 18♂); Ecuador, 45 mi. S. Alausi, Chimborazo, 3,000 m, 20 February 1955, E. I. Schlinger and E. S. Ross (1♀); Ecuador, 40 mi. S. Alausi, Chimborazo, 20 February 1955, E. I. Schlinger and E. S. Ross (1♀).

DISCUSSION.—This species is separated from *S. boliviensis* by the mostly orange abdomen, black hindlegs, and lack of a protruding scopa of the sheath. The species name is an arbitrary combination of letters and is to be treated as a noun.

TRICHOTAXONUS Rohwer

Trichotaxonus Rohwer, 1910, p. 30. Type-species: *Trichotaxonus reedi* Rohwer. Orig. desig.

Kuschelia Malaise, 1949, p. 21. Type-species: *Netrocerus solox* Enderlein. Orig. desig. New synonymy.

DESCRIPTION.—Antenna with first and second segments each longer than broad, third segment longer than fourth segment, segments beyond third gradually decreasing in length, the apical four segments not reduced (Fig. 6). Clypeus with small circular emargination; malar space linear; no genal carina; each mandible bidentate; eyes small, distance between eyes below longer than eye length; postocellar area as long as broad. No prepectus; distance between cenchri equal to breadth of a cenchrus. Each tarsal claw trifid, without basal lobe (Fig. 4); hindbasitarsus shorter than following tarsal segments combined. Forewing with vein 2A and 3A complete, either fused to 1A at center forming subequal basal and distal anal cells or connected to 1A by very short anal crossvein at this point. Hindwing with cell M present; anal cell with very short petiole or sessile; radial cell ends slightly before apex of wing and with short spurious vein. Male of *coquimbensis* with peripheral vein in hindwing. Wings as in Figs. 1–3.

DISCUSSION.—The trifid tarsal claws will separate *Trichotaxonus* from *Synaptoneura*. For avoidance of possible confusion of this genus with *Antholcus* Konow (Allantinae), see discussion under *T. coquimbensis*.

KEY TO SPECIES OF TRICHOTAXONUS

Long flexuous hairs on thorax, head, and legs; thorax black, abdomen, except for apical segments and basal plates, orange; clypeus with slight central emargination; Chile .... *coquimbensis* (Spinola)

Long hairs absent, vesture of short pubescence; thorax mostly red, abdomen black; clypeus truncate; Brazil .... *luteithorax* (Enderlein)

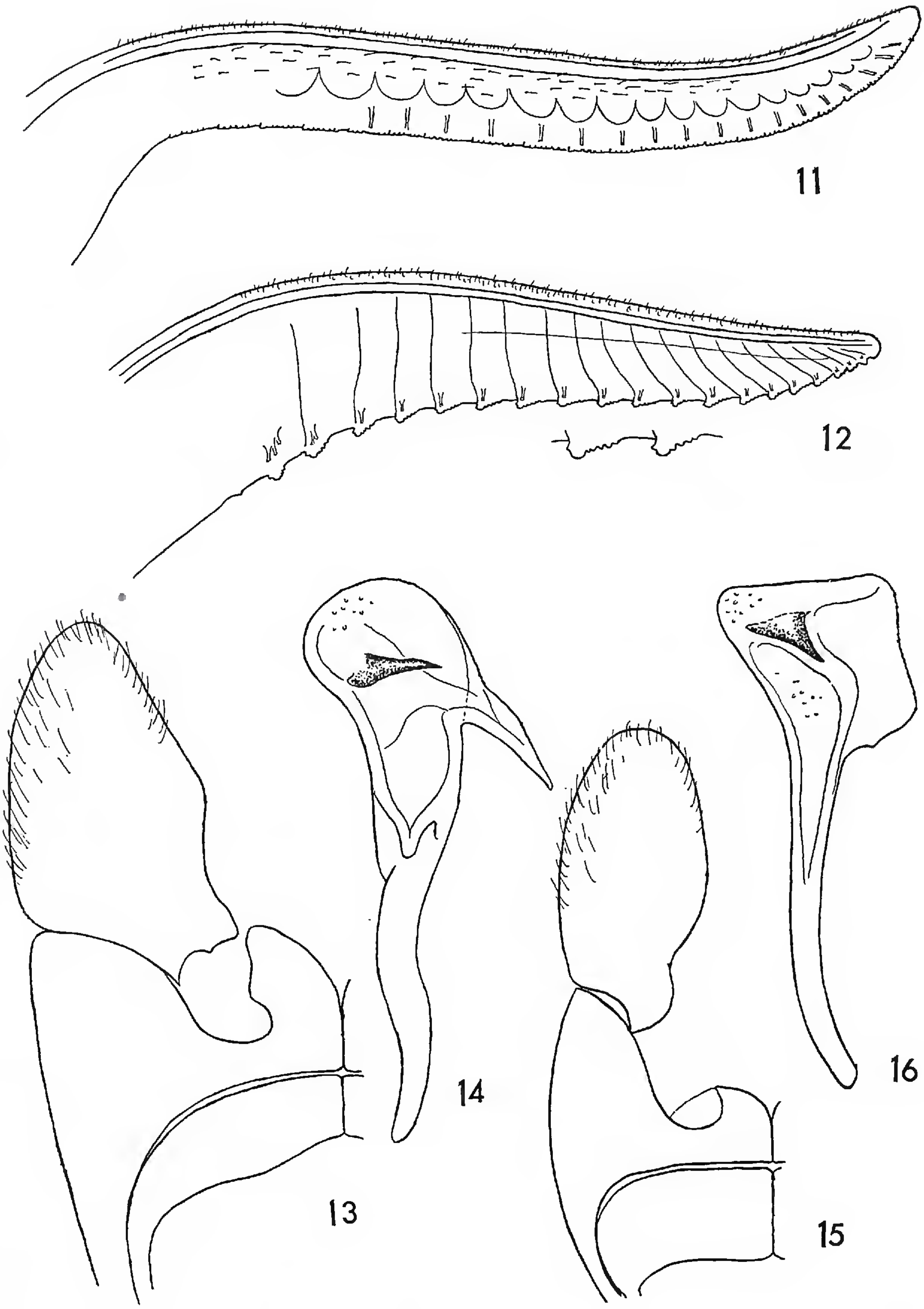

Fig. 11, female lancet of *Trichotaxonus coquimbensis.* Fig. 12, female lancet of *Synaptoneura vopida.* Fig. 13, male harpe and parapenis of *T. coquimbensis.* Fig. 14, penis valve of *T. coquimbensis.* Fig. 15, male harpe and parapenis of *S. vopida.* Fig. 16, penis valve of *S. vopida.*

TRICHOTAXONUS COQUIMBENSIS (Spinola), new combination

Tenthredo coquimbensis Spinola, 1851, p. 556.

Blennocampa chilensis Brèthes, 1910, p. 145. ♂. New synonymy.

Zarca chilensis: Brèthes, 1919, p. 51 (♀).

Trichotaxonus reedi Rohwer, 1910, p. 30. "♀" = ♂ (correction of sex on insert between pages 30 and 31). New synonymy.

Netrocerus solox Enderlein, 1920, p. 372. ♀ ♂. New synonymy.

Kuschelia solox: Malaise, 1949, p. 22; Benson, 1966, p. 75.

FEMALE.—Length, 9.0 mm. Antenna and head black. Thorax black. Legs black with apical half of forefemur, outer surface of foretibia, outer surface of midtibia whitish, and hindfemur entirely orange. Abdomen orange with basal plates and apical two segments and sheath black. Wings uniformly darkly infuscated; veins and stigma black. Head, thorax, and legs covered with long flexuous hairs, longer than length of first antennal segment. Clypeus with shallow central emargination; postocellar area about as long as broad. Vein 2A and 3A of forewing either fused to 1A at center or separated from 1A by very short anal crossvein. Sheath from above uniformly broad, in lateral view straight above, rounded below (Fig. 8a, 8b). Serrulae of lance flat, with no anterior and 10 to 13 posterior subbasal teeth (Fig. 11).

MALE.—Average length, 8.2 mm. Color and structure as for that of female. Harpe and parapenis as in Fig. 13; penis valve with lateral spine (Fig. 14).

TYPES.—The type of *T. coquimbensis* Spinola is in the Museo ed Instituto di Zoologia Sistematica, Universita di Torino, Italy. Three specimens are under the name *coquimbensis*, one of which is a female labeled "Typus" and "Kuchelia coquimbensis Spinola, det. R. Malaise, 1955." The other specimens are a male and female which lack labels except for "♀" and "Antholcus varinervis Spinola, det. R. Malaise, 1955" on the female. The specimen labeled "Typus" is the species treated here and it agrees well with Spinola's description. The other two specimens are *Antholcus varinervis* (Spinola) as they agree with Spinola's description and follow the traditional usage of the name. Specimens which may be the types of that species have not been located. Spinola did not state how many specimens he examined; however, in order to fix the identity of *T. coquimbensis*, I am hereby designating the specimen labeled "Typus" as lectotype.

The type of *Blennocampa chilensis* Brèthes may be at the Museo Argentino de Ciencias Naturales Bernardino Rivadavia, Buenos Aires. I have not been able to examine the specimen, but it is clear from Brèthes' descriptions of 1910 and 1919 that this is the same as *T. coquimbensis*.

Rohwer's types of *T. reedi*, four males, are in the U. S. National Museum, type no. 13076, and each is labeled "Chile, E. C. Reed." Three specimens are the species treated here, and I am hereby designating one of them as lectotype. The other specimen is *Antholcus varinervis* (Spinola).

The type of *Netrocerus solox* Enderlein is in the Polska Akademia Nauk, Instytut Zoologiczny, Warsaw, a female labeled "Chile," "Type" [red label], and a handwritten name label "Netrocerus solox Enderlein, ♀, Dr. Enderlein det. 1918."

DISTRIBUTION.—Chile. My confirmed records: Cubillo, Cord. Curico, 24–26 January 1961; El Pangue, Coquimbo, 1,500 m., 3–5 November 1961, 4 November 1961; El Manzanito, 24 October 1948; Estero Cabrera, Cord. Curico, 9 February 1961; El Coigo, Cord. Curico, February 1961; Acon. Zapallar, 15 December 1950.

DISCUSSION.—The black thorax, orange abdomen, and long hairs of the head, thorax, and legs will distinguish this species from *T. luteithorax*. It is more likely to be confused with *Antholcus varinervis* (Spinola), a species in the Allantinae from Chile, because of the similarity of coloration and variation of the anal veins in *T. coquimbensis*. *Antholcus varinervis* has the abdomen entirely orange, each femur and tibia mostly orange, lacks long hairs, has a long oblique anal crossvein in the forewing, and has the anal cell of the hindwing petiolate. In *T. coquimbensis*, vein 2A and 3A may be separated from 1A but is connected to 1A by a very short crossvein.

TRICHOTAXONUS LUTEITHORAX (Enderlein), new combination

Lycaota luteithorax Enderlein, 1920, p. 370. ♀.

FEMALE.—Length, 8.3 mm. Antenna and head black. Thorax orange with mesoscutellum and metanotum black. Legs and abdomen black. Wings uniformly, black infuscated; veins and stigma black. Pubescence on head and thorax much shorter than length of first antennal segment. Clypeus truncate; labrum short and broad, truncate; postocellar area slightly broader than long. Sheath thin from above, in lateral view, straight above, rounded below. Vein 2A and 3A of forewing nearly fused at center with 1A, very short crossvein present (similar to Fig. 2).

MALE.—Unknown.

TYPE.—At the Polska Akademia Nauk, Instytut Zoologiczny, Warsaw, Poland, a female labeled "S. Catarina, Luderwaldt," "Type," [red label], and a handwritten determination label "Lycaota luteithorax Enderlein, ♀ type, Dr. Enderlein det. 1918."

DISTRIBUTION.—Known only from the type locality in Brazil.

DISCUSSION.—A distinctive species, *T. luteithorax* is separated from *T. coquimbensis* by the mostly orange thorax, black abdomen, and lack of long, flexuous hairs on the head, thorax, and legs.

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BOOK REVIEW

MONOGRAFIA DA TRIBO IBIDIONINI (COLEOPTERA, CERAMBYCINAE). By Ubirajara R. Martins. Partes I–VI. Arquivos de Zoologia, 16 (1–6, + estampas 1–30). Parte I (30.XI.1967), pp. 1–320, figs. 1–180. Parte II (15.VIII.1968), pp. 321–630, figs. 181–347. Parte III (30.IX.1969), pp. 631–878, figs. 348–454. Parte IV(5.III.1970), pp. 879–1150, figs. 455–586 (pp. 878 and 1150 are blank). Parte V (5.VIII.1970), pp. 1151–1341, figs. 587–683. Estampas 1–30 (30.IX.1970), 120 figs. in color. Parte VI (1971), pp. 1343–1508, figs. 684–710. From the Museu de Zoologia da Universidade de São Paulo, Avenida Nazaré 481, Caixa Postal 7172, São Paulo, S. P. Brasil. Price not stated.

The book-sized parts of this revisional study indicate the amazing extent of this neotropical tribe (Old World genera, earlier placed in it, are now excluded), and the high proportion of new genera show the need there has been for restudy. North American species are of course included. The work is replete with keys for identification, redescriptions, figures of whole beetles and dissections of mouthparts, genitalia, etc. There are new data on the habits of adults and the host plants of larvae; the 120 figures in color are uniformly fine; the work contains a broad spectrum of data, good mining ground for other than coleopterists, and Dr. Martins should receive the thanks of all. A supplementary paper describing 17 new species and designating lectotypes for Lacordaires species also appeared in 1971 (Arq. Zool. Estado São Paulo, 21 (3): 121–178, 25 figs.).—HUGH B. LEECH, *California Academy of Sciences, San Francisco, 94118.*